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Meterman

LM631 Operating Instructions

P/N 1638812

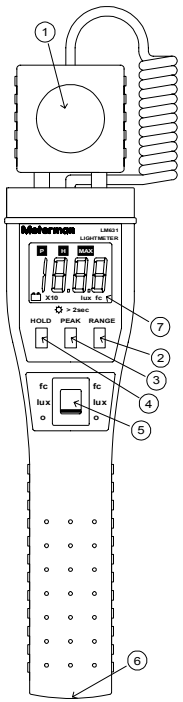
WARRANTY

The LM631 Digital Light meter is warranted against any defects of material or workmanship within a period of one (1) year following the date of purchase of the Light meter by the original purchaser or original user. Any light meter claimed to be defective during the warranty period should be returned with proof of purchase to an authorized Meterman Test Tools Service Center or to the local Meterman Test Tools dealer or distributor where your light meter was purchased. See repair section for details. Any implied warranties arising out of the sale of a Meterman Test Tools light meter, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited in duration to the above stated one (1) year period. Meterman Test Tools shall not be liable for loss of use of the light meter or other incidental or consequential damages, expenses, or economical loss or for any claim or claims for such damage, expenses or economical loss. Some states do not allow limitations on how long implied warranties last or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

CERTIFICATIONS AND PRECAUTIONS

■ The LM631 instrument is EN61326-1 certified for EMC and EMI. ■ Do not use any damaged part. ■ Do not operate instrument in an explosive atmosphere. It is recommended that you read the safety and operation instructions before using the Light meter. The symbol on the instrument indicates that the operator must refer to an explanation in this manual. It is recommended that you read the safety and operation instructions before using the light meter.

INTRODUCTION



This instrument is a portable easy use 3½ digit, compact sized digital light meter designed for simple one hand operation with the reading in lux or fc units. Its controls are: 1. Sensor Head. 2. RANGE button. 3. PEAK HOLD (50 mS pulse light) button and Back light switch. 4. DATA HOLD button. 5. Lux / fc / OFF selector 6. mV output jack. 7. LCD display.

Back Light: Press the 'PEAK' button for greater than 2 seconds to toggle the backlights ON and OFF.

PEAK- HOLD button: Press the 'PEAK' button to toggle the PEAK Hold function ON and OFF. In the PEAK-HOLD mode, the " P MAX " annunciator is displayed and the last reading is held on the display. If the new reading exceeds the previous reading and the new value is displayed.

RANGE Button: Each time you press 'RANGE' button, the range annunciators change

DATA-HOLD Button: Press 'HOLD' button to toggle the DATA-HOLD mode On and Off. In the DATA-HOLD mode, the " H " annunciator is displayed and the last reading is held on the display.

Auxiliary output: The microphono jack (2.5 mm) connector output is active as long as the light meter is turned on.

OPERATION

1. Set the function switch to the desired lux or fc units.
2. Remove the sensor head cover.
3. Hold the sensor head steady and make certain that the light source completely fills the cosine correction dome.
4. Move away from the sensor head to avoid shadowing it.

The sensor head has a 1.5 meter cable to allow separation between the observer and the measurement location.

5. Read the luminance value from the display. If magnitude of lux (or fc) is not known, press RANGE button to the highest range and reduce until a satisfactory reading is obtained.
6. Cover sensor head to extend sensor life.

SPECIAL CONSIDERATIONS

■ Keep the plastic domed cosine corrector clean and free of scratches. It may be cleaned with a soft cloth and isopropyl alcohol.
■ When light is received from many directions simultaneously, take special care to avoid reflections or shadowing the sensor with your body.
■ For best accuracy, repeat the measurement several times to ensure that the light source has remained stable.
■ Avoid flexing the cable excessively at either end of the cable.

MAINTENANCE

In Case of Difficulties: In the case of improper operation of the light meter, first review the operating instructions for possible errors in operation. Check the condition of the batteries. The battery " " symbol appears when the voltage falls below the level where accuracy is guaranteed. Replace the batteries immediately.

Battery Replacement

To replace the batteries (4 – AAA) unscrew the battery hatch screw and remove the old batteries. Install the new batteries observing the diagram in the battery area.

Cleaning Procedure

Gently wipe dirt from the surface of the unit with a soft cloth moistened with a small amount of water or neutral cleanser. Do not use benzene, alcohol, acetone, ether, paint thinner, lacquer or ketone solvents on the units, under any circumstances as these may cause deformation or discoloration.

REPAIR

Read the warranty located at the front of this manual before requesting warranty or non-warranty repairs. For warranty repairs, any lightmeter claimed to be defective can be returned to any Meterman Test Tools authorized distributor or to a Meterman Test Tools Service Center for an over-the-counter exchange for the same or like product. Non-warranty repairs should be sent to a Meterman Test Tools Service Center. Please call Meterman Test Tools or enquire at your point of purchase for the nearest location and current repair rates. All light meters returned for warranty or non-warranty repair or for calibration should be accompanied by the following information or items: company name, customer's name, address, telephone number, proof of purchase (warranty repairs), a brief description of the problem or the service requested, and the appropriate service charge (for non-warranty repairs). Service charges should be remitted in the form of a check, a money order, credit card with expiration date, or a purchase order made payable to Meterman Test Tools or to the specific service center. For minimum turn-around time on out-of-warranty repairs please phone in advance for service charge rates. The light meter should be shipped with transportation charges prepaid to one of the following addresses or to a service center:

in U.S.A.	in Canada	in Europe
Meterman Test Tools	Meterman Test Tools	Meterman Test Tools
1420 75th Street SW	400 Britannia Rd. E.Unit #1	52 Hurricane Way
Everett, WA 98203	Mississauga, ON L4Z 1X9	Norwich, NR6 6JB, U.K.
Tel: 1-877-596-2680	Tel: (905) 890-7600	Tel: int + 44-1603-404824
Fax: 425-446-6390	Fax: (905) 890-6866	Fax: int + 44-1603-482409

The instrument will be returned with the transportation charges paid by Meterman Test Tools.

SPECIFICATIONS

GENERAL

Display: 3½ digit LCD with maximum reading of 1999
Overrange: (OL) is displayed
Low battery indication: " " is displayed
Measurement rate: 2.5 times per second, nominal.
Operating Environment: 0 °C to 50 °C (32 °F to 122 °F) at < 75% R.H.
Storage Temperature: -20 °C to 60 °C (-4 °F to 140 °F), 0 to 80 % R.H. with batteries removed
Environment: Indoor use, Altitude up to 2000 m.
Battery: 4 pcs 1.5V (AAA size) UM-4, R03
Battery Life: 200 hours typical with carbon zinc battery
Dimensions: 170 x 44 x 40 mm
Weight: 220g (7.76oz) including batteries

CE EMC: Conforms to EN61326-1. This product complies with requirements of the following European Community Directives: 89/ 336/ EEC (Electro-magnetic Compatibility) as amended by 93/ 68/ EEC (CE Marking).

However, electrical noise or intense electromagnetic fields in the vicinity of the equipment may disturb the measurement circuit. Measuring instruments will also respond to unwanted signals that may be present within the measurement circuit. Users should exercise care and take appropriate precautions to avoid misleading results when making measurements in the presence of electronic interference.

ELECTRICAL

Accuracy: at 23°C ± 5°C (73°F ± 9°F), < 75 % relative humidity
Ranges: 20 lux, 200 lux, 2000 lux, 20000 lux
20 fc, 200 fc, 2000 fc, 20000 fc
Total accuracy for CIE standard illuminant A (2856K): ± (3 % rdg + 10 dgts)
Temperature Coefficient: 0.1x (specified accuracy)/°C (< 18°C or >28 °C), 0.056 x(specified accuracy)/°F (< 64.4°F or > 82.4°F)
Resolution: 0.01lux; 0.01fc
Spectral response: CIE photopic – CIE standard illuminant A
Acceptance angle: f'_2 < 2 %; cosine corrected (150°)
Peak Hold response time: >50mS pulse light.
Analog output: 1 mV = 1 lux or 10 mV = 1 fc , nominal, continuous output

The CIE photopic curve is an international standard for the color response of the average human eye. CIE standard illuminant A is defined as: A gas- filled tungsten-filament lamp operating at a correlated color temperature of 2856K.